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United States Department of Agriculture
Cooperative State Research, Education, and Extension Service
CSREES Plant Sciences

Plant Sciences UPDATE

The Plant Sciences UPDATE has a NEW LOOK!

Winter Issue

February 2005

IN THIS ISSUE

LEAD STORY

Pink Hibiscus Mealybug, *Maconellicoccus hirsutus*

Hibiscus twig infested with PHM.

The pink hibiscus mealybug (PHM), *Maconellicoccus hirsutus* (Green), is an exotic pest species that invaded California in 1999 and Florida in 2002. Worldwide, PHM has been recorded from over 300 host plant species, including citrus, ornamentals, and vegetables. Despite federal (USDA-APHIS) and state (FDACS-DPI) efforts to regulate and control the spread of PHM to other susceptible states, a nursery in Homestead, FL, accidentally shipped 900,000 hibiscus plants from potentially infested stock to 36 states in the U.S. from January through July 2004. According to USDA-APHIS personnel, 11 of the states that received plant shipments are climatically suitable for establishment of the mealybug. Of these plant shipments, which went to retail outlets in the 36 states, PHM was confirmed from plant material in Kansas, Louisiana, and North Carolina.

Pink Hibiscus Mealybug (PHM), *Maconellicoccus hirsutus*

Given the broad host range of PHM, the climatic suitability for its establishment in 17 southern states, and its potential for persistence in more temperate climatic regions on nursery stock in glasshouses, etc., it has been estimated that this pest species could potentially cause economic losses of $750 million per year in the U.S. alone (APHIS-PPQ 2004). In California and Florida, control methods have primarily consisted of releasing the parasitic wasps, *Anagyrus kamali* and *Gyranusoidea indica* (Hymenoptera: Encyrtidae), in order to maintain PHM populations below economically damaging levels. These parasitoids have also successfully controlled the mealybug in Grenada, other Caribbean countries, the Bahamas, Belize, the U.S. Virgin Islands, Puerto Rico, California and Florida. However, chemical control will likely continue to be emphasized in nursery stock settings that have zero tolerance standards for various pest species. Successful management of PHM will require monitoring, detection, correct identification, and the implementation of management strategies (including natural enemy releases/monitoring of natural enemy impact, sanitation, chemical control, and other approaches). In order to ensure effective coordination of this effort, a Pink Hibiscus Mealybug Steering Committee will be formed, comprised of representatives from the Regional IPM Centers, National Plant Diagnostic Networks, LGU's, Federal Agencies (USDA-APHIS, USDA-ARS, USDA-CSREES), and other entities. If PHM is able to gain a foothold in a number of climatically suitable states in the U.S., it is anticipated that potentially severe economic damage could follow unless an early detection and rapid response system is established. Dr. Robert Nowierski, National Program Leader for Bio-Based Pest Management, is helping to facilitate the development of such a system for the pink hibiscus mealybug with help from the Regional IPM Centers, National Plant Diagnostic Networks, LGU's, federal and non-federal entities.

Adult female PHM laying egg sac.

Adult male PHM

Photo Credits: Marshall Johnson, University of California, Kearney Agricultural Center, Parlier, CA

Web access: http://mrec.ifas.ufl.edu/lso/Mealybugs.htm
For more information: Robert Nowierski at rnowierski@csrees.usda.gov

FUNDING IMPACTS AND OPPORTUNITIES

IMPACT

RAMP Funds High-tech Farming Tool to Predict Pests and Economic Impacts

The future of agriculture is becoming a reality, thanks to the CSREES' Risk Avoidance and Mitigation Program (RAMP), which funded a project for the Pennsylvania IPM program, that is a collaboration between the Pennsylvania State University and the Pennsylvania Department of Agriculture. A Bellefonte, Pa. company and researchers at Penn State have taken the next step toward modern agriculture. The survival of modern agriculture is increasingly dependent on information technology. Timely, accurate information can improve production and profits, minimize environmental impacts and keep the American farm a vibrant enterprise. The Internet and modern computers provide the backbone for the delivery of new information tools to the agricultural sector. Increasingly, universities are teaming up with service companies to make these tools available.

The Pennsylvania IPM Advisory Committee held its fall meeting at ZedX, Inc. headquarters in November. Dennis Calvin, professor of entomology at Penn State, works in conjunction with ZedX on corn phenology models. ZedX, Inc. provides growers with site-specific weather predictions for their farms and orchards along with interpretive summaries to indicate historical and forecasted pest information based on the weather. Growers can format ZedX's high-resolution weather data, crop data, satellite imagery and other data for various uses. ZedX can alert their users to pest information such as disease infection, times to scout for various insect pests, and the optimum control times several days before the actual events occur. Calvin helps ZedX link weather models with insect, diseases, and weed models that enable growers to time pesticide sprays and other management tactics. The use of such technology can be a part of a grower's integrated pest management (IPM) program.

In addition, by using the models, they've been able to determine what economic impact bio- engineered crops such at BT corn has had nationwide. In the development of Bt corn, a gene from the bacterium Bacillus thuringiensis is added to make the hybrid resistant to the European corn borer and other pests. The European corn borer, the targeted pest of Bt corn, costs U.S. corn growers more than $1 billion annually in yield loss and crop protection costs. "Once the targeted pest ingests the tissue of the plant containing the Bt crystalline protein, the toxin acts on the gut lining of the insect to break down, killing the insect," says Calvin. Currently, over 39 percent of the nation's corn acreage is now Bt corn. Joe Russo, president of information technology at ZedX, Inc., says that by using 33 years of weather data they've collected, they can predict the economic value of Bt-corn hybrids with different maturities and planting dates for any geographic location in the United States. "By looking at the weather-pest linked models, we can determine what effect pests, such as European corn borer, will have on a crop by determining the synchrony of key pest stages and sensitive plant stages. We can then calculate the per acre value of using Bt corn by looking at the average yield, market value and expected loss caused by each insect in the plant," Russo explains. The Bt Evaluation Tool is available on the Web (www.essc.psu.edu/bet) as a free service to growers and kept up to date during the growing season.

For more information: Kristie Auman-Bauer at kma147@psu.edu **Web access:** http://paipm.cas.psu.edu

OPPORTUNITIES

Western Region IPM Grant Program

The Western IPM Center has just released the Western Region IPM Grant Program RFA. In FY 2005, CSREES will provide $684,000 for support of the IPM Competitive Grants Program - Western Region (W-IPM). Approximately $420,000 is expected to be available for research projects, $70,000 for extension projects, and $165,000 for joint research-extension projects. Proposal deadline is 5:00 PM, February 18, 2005. **Web access:** www.wrpmc.ucdavis.edu/

Maize Genome Sequencing Project

CSREES requests applications for the NRI: Maize Genome Sequencing Project: a National Science Foundation (NSF)/ U.S. Dept. of Energy (DOE)/USDA joint program. In FY 2005, it is anticipated that approximately $30 million will be available for support of this program. Completed applications must be received by close of business on February 18, 2005.

For more information: Ed Kaleikau at mailto:ekaleikau@csrees.usda.gov
Web access: www.csrees.usda.gov/fo/maizegenomesequencingnri.html

Biotechnology Risk Assessment Grants (BRAG) Program

CSREES requests applications for the BRAG Program. In FY 2005, it is anticipated that approximately $3 million will be available for support of this program and awards will range from $5,000 to $400,000. Completed applications must be received by close of business on February 24, 2005.
For more information: Dan Jones at djones@csrees.usda.gov or Chris Wozniak at mcwozniak@csrees.usda.gov
Web access: www.csrees.usda.gov/fo/biotechnologyriskassessment.html

Pest Management Alternatives Program (PMAP)

CSREES requests applications for the Special Research Grants Program - Pest Management Alternatives Research: Addressing Food Quality Protection Act Issues. In FY 2005, it is anticipated that approximately $1.4 million will be available to support successful PMAP applicants from the four regions (North Central, Northeastern, Southern, and Western) of the United States. Completed applications must be received by close of business on February 28, 2005.
For more information: Monte Johnson at mmpjohnson@csrees.usda.gov
Web access: www.csrees.usda.gov/fo/pestmanagementalternativessrgp.html

Crops at Risk (CAR), Methyl Bromide (MBT), Risk Avoidance and Mitigation (RAMP)

CSREES is announcing that the Integrated Research, Education, and Extension Competitive Grants Program – Integrated Pest Management request for applications (RFA), which includes:

- CAR: In FY 2005, it is anticipated that approximately $1.3 million will be available for support of this program. Completed applications must be received by close of business on March 7, 2005.
  For more information: Rick Meyer at hmeyer@csrees.usda.gov
  Web access: www.csrees.usda.gov/fo/cropsatriskicgp.html
- MBT: In FY 2005, it is anticipated that approximately $2.9 million will be available for support of this program. Completed applications must be received by close of business on March 7, 2005.
  For more information: Dennis Kopp at dkopp@csrees.usda.gov
  Web access: www.csrees.usda.gov/fo/methylbromideicgp.html
- RAMP: In FY 2005, it is anticipated that approximately $4.1 million will be available for support of this program. Completed applications must be received by close of business on March 7, 2005. Completed applications must be received by close of business on March 7, 2005.
  For more information: Robert Nowierski atrnowierski@csrees.usda.gov
  Web access: www.csrees.usda.gov/fo/riskavoidancemitigationicgp.html

Integrated Organic Program

CSREES requests applications for the Integrated Organic Program for fiscal year (FY) 2005 to solve critical organic agriculture issues, priorities, or problems through the integration of research, education, and extension activities in two program areas: (1) Organic Transitions Program (ORG); and (2) Organic Agriculture Research and Extension Initiative (OREI). In FY 2005, it is anticipated that approximately $4.7 million will be available for support of this program. Completed applications must be received by close of business on May 2, 2005.
For more information: Tom Bewick at tbewick@csrees.usda.gov
Web access: www.csrees.usda.gov/fo/integratedorganicprogramicgp.html

Functional Genomics

CSREES requests applications for the National Research Initiative (NRI) Functional Genomics of Agriculturally Important Organisms Competitive Grants Program. In FY 2005, it is anticipated that approximately $8 million will be available for support of this program. The remaining funds will be used to fund research projects. Completed applications must be received by close of business on June 15, 2005.
For more information: Ann Lichens-Park at apark@csrees.usda.gov (Microbes); Peter Burfening at pburfening@csrees.usda.gov (Animals); Mary Purcell-Miramontes at mpurcell@csrees.usda.gov (arthropods and nematodes); Ed Kaleikau at ekaleikau@csrees.usda.gov (Plants)
Web access: www.csrees.usda.gov/fo/functionalgenomicsnri.html

Plant Biosecurity Program

CSREES requests applications for the National Research Initiative (NRI) Plant Biosecurity Competitive Grants Program. For specific program priorities refer to the NRI FY 2005 Request for Proposals (RFA) posted on the web. CSREES anticipates that approximately $4 million will be available for support of this program and up to $1 milllion will be awarded for each grant for a period of 3-4 years. Completed applications must be received by close of business on June 15, 2005. Letters of intent are due by May 2, 2005. Application materials can be downloaded from the web.
For more information: Kitty Cardwell kcardwell@csrees.usda.gov or Ed Kaleikau at ekaleikau@csrees.usda.gov
Web access: www.csrees.usda.gov/fo/biosecurityanimalplantnri.html

Special Research Grants Program: Citrus tristeza Research

CSREES requests applications for the Special Research Grants Program – Citrus tristeza Research (CTV) program for FY 2005 to conduct research that facilitates or expands promising breakthroughs in areas of the food and agricultural sciences of importance to the United States. CSREES anticipates that approximately $620,000 will be available for support of this program in FY 2005. Applications must be received by close of business by 5:00 p.m., March 4, 2005.
For more information: Kitty Cardwell kcardwell@csrees.usda.gov
Web access: www.csrees.usda.gov/fo/citrustristezasrgp.html

Upcoming RFAs

Applied Plant Genomics Coordinated Agricultural Project
Web access: www.csrees.usda.gov/fo/plantsappliedgenomicscapnri.html
Sustainable Agriculture Research and Education Program
Web access:www.csrees.usda.gov/fo/sustainableagricultureresearcheducation.html

CSREES PROGRAM HIGHLIGHTS

CSREES Funds Invasive Plant Atlas

The Invasive Plant Atlas of New England (IPANE) was started in 2001 as a multifaceted approach to dealing with invasive plants in a 6 state region. A consortium of biologists from the University of Connecticut, the Silvio O. Conte National Fish and Wildlife Reserve, and the New England Wild Flower Society were funded by USDA-CSREES- Initiative for Future Agricultural and Food Systems (IFAFS) to develop and maintain the program. The intention was to bring invasive species science to the public and in turn use the public to gather ecological data that could drive scientific research. The overarching goal was to use the components of the project to develop an early detection network for New England.

Three years into the award, IPANE is meeting many of its goals and receiving lots of attention. The project reached its goal of 450 project-trained volunteers in 2004, a year ahead of schedule. These volunteers gather basic biological data on over 100 species from all over New England The data is available to both the public and researchers. One of the main research objectives is the use of this data in developing predictive models of invasive species potential distribution in the region. This information can, in turn, be used to direct "informed" searches for new incursions around the region. The IPANE staff is working with the USGS and the Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW) to develop a national Early Detection and Rapid Response network. IPANE, with its science-driven programs and use of volunteers is being looked at as a model for Early Detection Networks in this country. Protocols that are being developed in conjunction with IPANE will be tested nationally. Dr. Randy Westbrooks, United States Geological Survey's (USGS) national Invasive Plants Coordinator and author of the Invasive Plants Fact Book relayed the following sentiment to the PDs: "Make no mistake – IPANE is unique – there is not a similar system anywhere else in existence". **Web access** for IPANE http://ipane.org

CSREES Awards $5 Million for Rice Genomic Research

Agriculture Secretary Ann M. Veneman announced on Dec 13, 2004 that USDA will give $5 million to support research that will improve rice crops by using new genomic-based tools. The grant, awarded through the CSREES National Research Initiative (NRI) Competitive Grants Program, will fund the Rice Coordinated Agricultural Project (RiceCAP), a project to coordinate rice research and outreach efforts between the multi-state, multidisciplinary team including 14 institutions in 11 states and will be coordinated by scientists at the University of Arkansas. "This grant will support critical

research that may lead to better understanding the genetic makeup of rice with the goal of improving milling quality and resistance to sheath blight disease," said Veneman. "The final product of this grant should lead to development of improved U.S. rice cultivars, and the building of a community of researchers trained in the application of new genomics-based tools to address the issue of quantitative inheritance in rice," said Joseph J. Jen, USDA undersecretary for Research, Education, and Economics. Included in this project will be a novel extension program to engage rice extension and industry personnel in agricultural genomics research and to explore the potential of the technology. Extension personnel will also educate the public on the merits of applying genome information to improve agricultural crops.
For more information: Ed Kaleikau at ekaleikau@csrees.usda.gov **Web access for RiceCAP:** www.uark.edu/ua/ricecap/
Web access for news release: www.uark.edu/depts/agripub/Publications/Agnews/agnews04-76.html

IR-4 and the Ornamental Horticulture Program

The 2004 the IR-4 Ornamental Horticulture Workshop, was held on November 9-12, 2004. The 3-day workshop determined which research projects the IR-4 Ornamental Horticulture Program funds in 2005. In each session participants had an opportunity to select the most critical research priorities ("Super A") for that discipline. The Insect Management session, selected scale and mealybug management and grub control as their priorities, while the Plant Pathology session, selected Phytophthora diseases as the highest priority. The Weed Management session, decided to expand the perennial list from last year's Super A protocol, and USDA-ARS has committed to completing the existing projects needing additional trials. The 2005 Super A protocol will be a project screen for quinoclamine phytotoxicity.

This year the IR-4 Project Management Committee voted to dedicate $200,000 to the 2005 Ornamental Horticulture program, which exhibited their commitment to the program. An additional $200,000 will be provided as a result of the approval of the increased FY 2005 IR-4 buget.

In addition to asking for and receiving dedicated funding, IR-4 sought to make improvements to the Ornamental Horticulture Program that included establishing Registrant Advisor and University Extension/ARS Advisory teams, creating guidelines for an acceptable number of trials for registrant label additions, crafting criteria for establishing priorities and hiring a new Ornamental Horticulture Manager, Cristi Palmer, who began working for IR-4 in December.

The Ornamental Horticulture advisory teams include members from seven crop protection companies, two ARS researchers and sixteen Land Grant University researchers. These members helped create the guidelines (which were distributed to all 2004 Workshop participants) for an acceptable number of trials. "Despite the challenges and changes, the IR-4 Ornamental Horticulture Program is on the right track. With dedicated financial commitment and stakeholder support the program will grow to its potential in the coming years," stated IR-4 Executive Director, Bob Holm. "We look forward to seeing IR-4 research make significant contributions to the US Ornamental Horticulture industry."

Major funding for IR-4 is provided by Special Research Grants and Hatch Act Funds from USDA-CSREES, in cooperation with the State Agricultural Experiment Stations, and USDA-ARS.

Soybean Rust Teleconference Training

The North Central Integrated Pest Management Center organized a regional teleconference training session to address soybean rust issues. Eleven states in the North Central region participated in this training teleconference entitled "Soybean Rust: Issues and Facts." Almost 100 sites participated in the regional program and attendees represent over 9.17 acres of soybean production. Members of the Planning Committee included Dr. Greg Tylka and Mr. Virgil Schmitt, Iowa State University; Drs. Lisa Behnken, Jim Kurle and Seth Naeve, University of Minnesota; Dr. Roger Borges, University of Wisconsin; Dr. Dean Malvick and Mr. Dave Feltes, University of Illinois; and Dr. Susan Ratcliffe, North Central IPM Center. The region's Extension IPM Coordinators were contacted to determine who should serve as the point of contact for each state as development of the program was shared across the region. The program was conducted on June 29, 2004. Presentations were provided by Drs. Matthew Royer, Animal and Plant Health Inspection Service (APHIS); Glen Hartman and Monte Miles, Agricultural Research Service (ARS); X.B. Yang, Chair of the North Central Technical Committee for Soybean Rust (NC-504); Kent Smith, Office of Pest Management Policy (OPMP); and David Bell, USDA Risk Management Agency (RMA). Each state had the opportunity to conduct a state specific teleconference to discuss their response plan following the regional teleconference. The PowerPoint presentations are available on the web at www.ncipm.org/soybeanrust/conference.html. The regional session was recorded and will be available for download with the PowerPoint presentations in the near future.
For more information: Susan Ratcliffe, North Central IPM Center, 217-333-9656, sratclif@uiuc.edu

First Detector Educator In-Service Training

The CSREES spnosored National Plant Diagnostic Network (NPDN) Education Committee, chaired by Dr. Gail Wisler and the Southern Plant Diagnostic Network (SPDN) is offering first detector training. This training is intended for county agents, pest coordinators/managers, and Master Gardeners in agriculture, horticulture, and natural resources. Lecture and hands-on sessions cover: the NPDN mission, monitoring for high risk pests, proper sample submission, common signs of insect and pathogen damage, exotic insects and pathogens of concern, digitally assisted diagnosis, and NPDN exercise scenarios.

The NPDN is divided into five regions each of which are coordinated by a Land-Grant Institution: the University of Florida – Southern (SPDN , Cornell University - Northeastern (NEPDN), Kansas State University – Great Plains (GPDN), Michigan State University - North Central (NCPDN) and the University of California, Davis- Western (WPDN). The University of Florida coordinates the SPDN, and the NPDN Education Sub-Committee, comprised of extension educators from across the US. The NPDN Education Sub-Committee has developed educational modules that are designed to assist "first detectors" in the early detection of exotic pests, particularly pathogens and insects. First detectors are those individuals who are most likely to first encounter exotic pests in the field. County extension agents, crop consultants, growers, Master Gardeners, and others involved in crop production or pest management are potential first detectors.

The objectives of this training are to i) create an awareness of agricultural bioterrorism and the mission of the NPDN; ii) improve exotic pest recognition and early detection capabilities; iii) improve identification skills of exotic and existing pests of concern; and iv) provide proper protocols for sample submission of suspected exotic pests. First detectors will become a part of a nationwide registry of first detectors who will be notified in the event of an exotic agricultural pest emergency. Many university diagnostic clinics will waive sample fees for county extension faculty who are sending a suspected "high risk" pest sample for diagnosis upon completion of this program. Although region-based training has been occurring for two years, the first national training occurred at the National Association of Agricultural County Agents in July.

For more information: Carrie Harmon 352-392-3631 ext 254, clharmon@ufl.edu or Amanda Hodges 352-392-1901 ext 122, achodges@ifas.ufl.edu **Web access and training materials:** http://spdn.ifas.ufl.edu/First_Detectors.htm

National Site for the USDA Regional IPM Centers Information System

The Regional Integrated Pest Management Centers are sponsored by CSREES. The national web site www.ipmcenters.org/ provides information about commodities, pests and pest management practices, people and issues in the United States. It also provides links to sites for each of the four Regional IPM Centers. At this national site you can access the Crop Profiles and Pest Management Strategic Plans databases, an IPM Expertise database, information on pesticide use, current pest management research, funding opportunities, and links to many related sites. At each of the Regional Center Sites, you can access the same information as found on this National Site, but specific to the individual region. Additional region-specific information, news and announcements can be found within each Regional Center's Site.

Northeastern IPM Center Sponsors a Conference on Urban and Community IPM

The Northeast Regional Community and Urban IPM Conference will be held March 15-16, 2005, in Manchester, NH. Researchers, educators, regulators, and pest managers from across the region will share their insights and expertise, emphasizing low-risk, environmentally sound methods for controlling insects, diseases, weeds, and wildlife pests in communities and urban settings. Conference session will include the following topics: IPM for urban forests and landscapes; IPM in homes, schools, and other buildings; IPM in turf settings such as parks, athletic fields, and golf courses; IPM education and outreach; Invasive species in the urban environment; Public health issues such as West Nile virus; Wildlife control methods; Agriculture in the urban environment. *Early registration ends February 15, and March 1 is the final registration deadline.*

For more information: Liz Thomas at 315-787-2626, egt3@cornell.edu
Register at the conference website: www.northeastipm.org/conference2005_index.cfm

UPCOMING AND RECENT MEETINGS

2005

February

- ASHS Southern Region Annual Meeting, Little Rock, AR, February 5-7, 2005. www.ashs.org/regional/southeast05.html
- IR-4 Strategic Planning Conference/Annual Meeting, Arlington, VA, February 15-16, 2005. www.ir4.rutgers.edu
- Society of American Florists Pest Management Conference, Orlando, FL, February 17–19, 21005. www.safnow.org/meetings/index.cfm
- Florida Postharvest Horticulture Industry Tour, Gainesville, FL, February 28 – March 3, 2005 www.hos.ufl.edu/sasaweb/Phi.htm

March

- 58th Western Society of Weed Science Annual Meeting. Vancouver, B.C., March 8–10, 2005. www.wsweedscience.org
- Plant Breeding and the Public Sector: Who will train plant breeders? Symposium, Michigan State University, East Lansing, MI, March 9-11, 2005. www.hrt.msu.edu/pbsymp/
- The Northeast Regional Community and Urban IPM Conference, Manchester, NH, March 15-16, 2005. www.nepmc.org/conference2005_index.cfm

May

- 57th International Symposium on Crop Protection, Ghent, Belgium, May 10. 2005. Kris.DeJonghe@ugent.be

June

- 122nd American Seed Trade Association Annual Convention. Seattle, Washington, June 18–22, 2005. www.amseed.com/mtg_2005ac_index.asp

July

- ASHS Annual Conference, Las Vegas, NV, July 18-21, 2005. www.ashs.org/conferences.html
- OFA - an Association of Floriculture Professionals 2005 Short Course & Trade Show, Columbus, OH, July 9-12, 2005. www.ofa.org
- 10th International Turfgrass Research Conference. Llandudno, North Wales, July,10–15, 2005. www.aber.ac.uk/itrc2005/
- National Association of County Agricultural Agents Annual Meeting. Buffalo, NY, July, 17–21, 2005. www.nacaa.com

August

- Southern Nursery Assoc., Inc. 2005 . . . The World's Showcase of Horticulture® Show, Atlanta, GA, August 11–13, 2005. www.sna.org/tradeshow/index.shtml
- International Conference on Biological and Pro-ecological Methods for Control of Diseases, Pests, and Weeds in Orchards and Small Fruit Plantations, Warsaw, Poland, August 29-31, 2005. www.pomocentre.insad.pl/index.php?pageid=4&id_info=138&action1=infomore

September

- IFOAM World Conference, Adelaide, Australia, September 19-23, 2005. www.nasaa.com.au/ifoam/
- 2nd International Symposium on Biological Control of Arthropods, Davos, Switzerland, September 12-16, 2005. www.cabi-bioscience.ch/ISBCA-DAVOS-2005/

2006

- Fifth National IPM Symposium "Delivering on a Promise", St. Louis, MO, April 4-6, 2006 www.ipmcenters.org/IPMSymposiumV/
- OFA - an Association of Floriculture Professionals 2005 Short Course & Trade Show, Columbus, OH, July 8-12, 2006. www.ofa.org/
- ASHS Annual Conference, New Orleans, LA, July 27–30, 2006. www.ashs.org/conferences.html
- 27th International Horticultural Congress. Seoul, South Korea, August 13–19, 2006. www.ihc2006.org

INSIDE THE BELTWAY

President's FY 2005 Budget Proposal

The FY 2005 Appropriations Act with rescission mark for CSREES is $1,175,810,000. This is an increase of $155,788,000 over the FY 2005 President's Budget and $51,898,000 over the FY 2004 appropriation with rescission. (The totals for the FY 2005 President's budget, the FY 2004 appropriation, and the FY 05 House marks include an estimate of interest earned on the Native American Endowment Fund). The complete CSREES budget is listed on pages 10-11. **Web access for budget info:** www.csrees.usda.gov/about/offices/budget.html

National Invasives Plan Hailed

A partnership involving CSREES and 15 federal agencies in six departments, charged with responsibility for addressing the biological and economic challenges posed by invasive plants designed a national plan to detect and rapidly respond to invasive plant infestations. The comprehensive plan won an award for its exceptional achievement and intra-agency cooperation. The Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW), developed "A National Early Detection and Rapid Response System for Invasive Plants in the United State." The national system is structured to detect and rapidly respond to invasive plant infestations, one of the greatest environmental challenges facing communities around the country.

The primary goals are to detect, report, identify, and contain or eliminate invasive plants. Following identification, rapid assessment of confirmed state and national data would follow to determine potential threats to habitats and environments, in turn leading to decisions for possible eradication or management of the suspect species. The key elements of the system are: early detection; early reporting; identification and vouchering of specimens by authorities; verification; archiving records; rapid assessment; and, rapid response.

For more information: Robert Nowierski at rnowierski@csrees.usda.gov
Web access: http://ficmnew.fws.gov/

AGENCY PERSONNEL SPOTLIGHT

James Kotcon Joined PAS as Program Leader for Organic Production

Dr. James (Jim) Kotcon will join the Plant and Animal Systems (PAS) unit on January 17th to begin a one year term as the Agency's Program Leader for organic production. Dr. Kotcon is on the faculty at West Virginia University, where he has an active research program in the interactions of cropping system rotations with rotational grazing schemes for livestock production. A major focus of this research is the effect of the rotations on animal health. Jim is part of a team that includes researchers from the University of Arkansas who successfully competed for a grant in the 2004 Integrated Organic Program. Their research revolves around using slow-growing broiler chickens in an effort to decrease the need for supplemental methionine in the feed ration. The need for artificial sources of methionine in the diets of chickens is a major impediment to the production of organic poultry.

Jim was instrumental in the development of the West Virginia University organic research farm. This facility has been rated as third best in the U.S. by the Organic Farming Research Foundation. A nematologist by training, Jim also has an active undergraduate and graduate teaching program and has worked at the state level in the development of standards for organic agriculture.

During his tenure at CSREES, Jim will develop a strategic assessment of leadership needs at the federal level in the area of organic agriculture and will work to improve communication and interaction between academia and industry interested in organic agriculture and CSREES. Jim's appointment marks a new commitment by CSREES in the area of organic agriculture. Jim can be contacted at jkotcon@csrees.usda.govor by phone at 202-401-4879.

RESOURCES

IPM Manuals

The Univ. of California Statewide IPM Program offers an array of IPM manuals including: IPM in Practice: Principles and Methods of Integrated Pest Management; plus crop specific IPM manuals for: alfalfa hay, almonds, apples and pears, citrus, cole crops and lettuce, cotton, potatoes, rice, small grains, stone fruits, strawberries, tomatoes, walnuts, and floriculture and nurseries. The UC IPM Pest Management Guideline and Notes series encompasses well over 100 additional titles on all manner of pests and pathogens covering, identification, monitoring, management, and other relevant aspects. These are freely available as illustrated HTML and PDF files from the Program website: www.ipm.ucdavis.edu/

For more information: ANR Communication Services at anrcatalog@ucdavis.edu, 510-642-2431
Web access: http://anrcatalog.ucdavis.edu

Soybean Rust Identification Card Now Available

A Soybean Rust Identification Card has been developed by USDA APHIS, Land-Grant Universities in cooperation with NC-504, the Ontario Ministry of Agriculture and Food, and the Soybean Check-off Board. Drs. Anne Dorrance, The Ohio State University, Loren Giesler, University of Nebraska, and Claude Knighten from APHIS provided leadership for this project. If you wish to receive copies of the ID card, please contact your state's Soybean Plant Pathologist. The ID card is available for download at www.ncipmc.org/soyrust.pdf

Web access for more info on Soybean Rust: www.aphis.usda.gov/lpa/issues/sbr/sbr.html

Soybean Rust Information

Among recently developed resources providing information about *Phakopsora* sp. (soybean rust), an illustrated feature on the American Phytopathological Society APSnet, "Soybean Rust: Is the U.S. Soybean Crop at Risk?" offers extensive background, life cycle data, surveillance techniques, a link to a national action plan for dealing with the problem, and numerous clear full color visuals to help identify infection symptoms. The feature article presents specific management recommendations including an extensive list of fungicides reported to have been used in 11 countries, plus the results and references in each case. The timely feature report was prepared by M.R. Miles, R.D. Frederick, and G.L. Hartman.

For more information: G.L. Hartman at GHartman@uiuc.edu or The American Phytopathological Society: aps@scisoc.org

Web access: www.apsnet.org/online/feature/rust/

Global IPM Project Report

Activities during the eleventh year of the U.S. Agency for International Development-funded global IPM Collaborative Research Support Program (IPM CRSP) have been summarized in a recent 63-page report, IPM CRSP Annual Highlights, Year 11, 2003-2004. Following an introduction explaining the rationale, origin, goals, and operating structure of the complex program and its multiple participating partners around the world, the text focuses on projects in each of five operational georegions: Africa, Latin America, Asia, the Caribbean, and Eastern Europe.

For more information: contact IPM CRSP atIPM-dir@vt.edu, 540-231-3513

Web access: www.ag.vt.edu/ipmcrsp/index.asp

The Bugwood Network

The Bugwood Image systems provide access to images (photographs, line drawings, artist renderings, etc.) for organisms, management practices and crop/hosts that are associated with both natural and agricultural ecosystems. It currently maintains four different image system interfaces that provide users with access to over 23,000 high quality images for educational uses. All images in The Bugwood Image systems are available at multiple resolutions, are downloadable and can be used for any educational application at no cost as long as appropriate credits are given. There are four user interfaces to The Bugwood Image and Archive systems. These are:

Forestry Images at www.forestryimages.org
IPM Images at www.IPMImages.org
Invasive Species at www.invasive.org
Insect Images at www.InsectImages.org

High Plains IPM Guide

The High Plains IPM Guide is a four state effort (Colorado, Wyoming, Nebraska and Montana) that contains pest management information for insects and diseases with links to weed recommendations for each state. There are insects and disease pests of 30-odd commodities and 5 types of livestock covered in the guide which is annually updated. Pest biology, life cycle, sampling and inclusive management options (cultural, biological, genetic and chemical) are included in each chapter. The guide is available on the web at www.highplainsipm.org

Cooperative State Research, Education, and Extension Service ($000)				
Programs	FY 2004 Appropriations Act	FY 2005 President's Budget	FY 2005 House Action	FY 2005 Appro. Act
Research and Education Activities				
Formula Programs:				
Hatch Act	$179,085	$180,148	$180,648	$178,707
McIntire-Stennis Cooperative Forestry	21,755	21,884	22,384	22,205
Evans-Allen Program	35,788	36,000	37,000	36,704
Animal Health and Disease, Section 1433	4,532	5,098	5,098	5,057
Subtotal	**241,160**	**243,130**	**245,130**	**242,673**
Special Research Grants:				
Expert IPM Decision Support System	158	177	177	157
Global Change, UV-B Monitoring	2,000	2,500	2,000	1,984
Integrated Pest Management & Biological Control	2,439	2,725	2,725	2,419
Minor Crop Pest Management, IR-4	9,549	10,485	11,235	11,145
Minor Use Animal Drugs	526	588	588	583
National Biological Impact Assessment Program	225	253	253	251
Pest Management Alternatives	1,448	1,619	1,619	1,436
Other	107,904	0	85,353	117,496
Subtotal	**124,249**	**18,347**	**103,950**	**135,471**
National Research Initiative Competitive Grants	**164,027**	**180,000**	**180,000**	**179,552**
Other Research:				
Critical Agricultural Materials	1,111	0	1,111	1,102
Aquaculture Centers	4,000	3,996	4,000	3,968
Sustainable Agriculture Research and Education Program	12,222	9,230	12,722	12,400
Supplemental and Alternative Crops	1,063	0	1,196	1,186
1994 Research Grants	1,087	998	1,087	1,078
Joe Skeen Institute for Rangeland Restoration	895	0	1,000	992
Federal Administration (Direct Appropriation)	37,482	7,538	42,610	42,546
Subtotal	**57,860**	**21,762**	**63,726**	**63,272**
Higher Education:				
Graduate Fellowships Grants	2,883	4,500	4,500	2,976
Institution Challenge Grants	4,859	5,500	5,500	5,456
1890 Institution Capacity Building Grants	11,411	11,411	12,411	12,312
Multicultural Scholars	986	998	998	990
Hispanic Serving Institutions Education Grants Program	4,645	4,645	5,645	5,600
Tribal Colleges Education Equity Grants Program	1,679	2,250	2,250	2,232
Tribal Colleges Endowment Fund	8,947	12,000	12,000	11,904
Interest (Estimated) Earned on the Tribal Colleges Endowment Fund	1,930	2,508	2,508	2,181
Secondary/2-Year Post Secondary	890	1,000	1,000	992
Agrosecurity Education	0	5,000	0	0
Alaska Native-Serving and Native Hawaiian-Serving Institutions	3,131	2,997	2,997	3,472
Resident Instruction Grants for Insular Areas	0	0	500	496
Subtotal	**41,361**	**52,809**	**50,309**	**48,611**
Total, Research and Education Activities	628,657	516,048	643,115	669,579
Outreach and Assistance for Disadvantaged Farmers Activities				
Section 2501:				
Outreach and Technical Assistance for Socially Disadvantaged Farmers and Ranchers Program	**5,935**	**5,935**	**5,935**	**5,888**

Cooperative State Research, Education, and Extension Service ($000)				
Programs	FY 2004 Appro. Act	FY 2005 President's Budget	FY 2005 House Action	FY 2005 Appro. Act
Integrated Activities				
Section 406 Legislative Authority:				
Water Quality	$11,530	$12,971	$12,971	$12,867
Food Safety	13,305	14,967	14,967	14,847
Regional Pest Management Centers	4,028	4,531	4,531	4,167
Crops at Risk from FQPA Implementation	1,330	1,497	1,497	1,389
FQPA Risk Mitigation Program for Major Food Crop Systems	4,345	4,889	4,889	4,464
Methyl Bromide Transition Program	3,131	2,498	2,498	3,106
Organic Transition Program	1,889	499	1,889	1,874
Subtotal	**39,558**	**41,852**	**43,242**	**42,714**
Other Legislative Authorities:				
International Science and Education Grants Program	895	1,000	1,000	992
Critical Issues	444	2,500	2,500	744
Regional Rural Development Centers	1,345	1,513	1,513	1,334
Food and Agriculture Defense Initiative (Homeland Security)	7,953	30,000	18,000	8,928
Subtotal	**10,637**	**35,013**	**23,013**	**11,998**
Total, Integrated Activities	50,195	76,865	66,255	54,712
Extension Activities				
Formula Programs:				
Smith-Lever Formula 3(b) &(c)	$277,742	$275,940	$277,242	$275,520
1890 Institutions	31,720	32,117	33,133	32,868
Subtotal	**309,462**	**308,057**	**310,375**	**308,388**
Smith-Lever 3(d) Programs:				
Expanded Food and Nutrition Education Program	52,057	57,909	58,909	58,438
Pest Management	9,563	10,759	10,759	9,920
Farm Safety	4,911	0	4,600	4,563
Children, Youth, and Families at Risk	7,538	8,481	8,481	7,478
Youth Farm Safety Education and Certification	444	499	499	440
Sustainable Agriculture	4,333	3,792	4,000	4,067
Extension Indian Reservations Program	1,774	1,996	1,996	1,760
Subtotal	**80,620**	**83,436**	**89,244**	**86,666**
Other Extension Programs:				
Extension Services at the 1994 Institutions	2,929	3,273	3,273	3,247
Renewable Resources Extension Act	4,040	4,093	4,093	4,060
Rural Health and Safety	2,331	0	0	1,965
1890 Facilities (Sec.1447)	14,912	14,912	16,912	16,777
Grants for Youth Serving Institutions	2,667	0	0	2,646
Federal Administration:				
Other	21,542	6,653	15,702	21,152
Ag in the Classroom	622	750	750	730
Subtotal	**49,043**	**29,681**	**40,730**	**50,577**
Total, Extension Activities	439,125	421,174	440,349	445,631
Total, Cooperative State Research, Education, and Extension Service	1,123,912	1,020,022	1,155,654	1,175,810

PLANT SCIENCES STAFF DIRECTORY

For more information about our programs, consult our Web site or the appropriate individual listed below:

Name	Discipline / Program / Issue	Phone (202)	Email *
Auburn, Jill	Sustainable Agriculture		
Bewick, Tom	Horticulture / Organic Agriculture, Invasive Species, Urban Agriculture	401-3356	tbewick
Bolton, Herb	Entomology / Invasive Species	401-4201	hbolton
Bowers, Michael	Ecology / Conservation Biology, Invasive Species	401-4510	mbowers
Cardwell, Kitty	Plant Pathology / National Plant Diagnostic Network	401-1790	Kcardwell
Cleland, Charles	Plant Physiology / Small Business / Forests & Related Resources	401-6852	ccleland
Fitzner, Mike	Section Leader-Plant Systems -Extension IPM, Regional IPM Centers	401-4939	mfitzner
Gilbert, Leslie	Horticulture / Entomology (Pollinators) / Sustainable Agriculture	205-0440	lgilbert
Goldner, William	Small Business / Plant Production and Protection – Biology & Engineering, Industrial Applications / Production Horticulture, Specialty Crops, Plant Breeding, Physiology, Biochemistry	401-1719	wgoldner
Green, James	Horticulture / Nursery and Greenhouse Crop Physiology & Production, Landscape & Turf Maintenance, Home Horticulture	401-6134	jgreen
Hoffman, Bill	Agricultural Homeland Security & IPM Evaluation	401-1112	whoffman
Jerkins, Diana	Managed Ecosystems, Agroecology	401-6996	djerkins
Jones, Dan	Biochemistry / Biotechnology, Microbial Genomics	401-6854	djones
Jones, Preston	Agronomy / Forage Crops	401-1990	jpjones
Johnson, Monte	Entomology & Toxicology / PSEP; PMAP	401-1108	mpjohnson
Kaleikau, Ed	Plant Genomics	401-6030	ekaleikau
Kimble-Day, Kathy	Program Specialist	401-4420	kday
Kopp, Dennis	Entomology / Liaison to IR-4, MBT Alternatives	401-6437	dkopp
Lichens-Park, Ann	Plant Pathology / Biology of Plant Microbe Assn. / Microbial Gene Sequencing	401-6466	apark
Lin, Liang-Shiou	Plant Genetic Mechanisms / Plant Growth & Development	401-5042	Llin
McLean, Gail	Plant Biochemistry, Bioinformatics Plant/ Responses to the Environment	401-6060	gmclean
Meyer, Rick	Entomology / CAR / Critical Issues	401-4891	hmeyer
Nowierski, Bob	Applied Ecology/ Bio-based IPM / RAMP, Invasive Species	401-4900	rnowierski
Ortman, Eldon	Shared Faculty; IPM	401-5804	eortman
Poth, Mark	Director, National Research Initiative	401-5244	mpoth
Parochetti, Jim	Weed Science	401-4354	jparochetti
Purcell-Miramontes, Mary	Entomology, Applied Ecology / Arthropods and Nematode programs in NRI	401-5114	mpurcell
Rhodes, Amy	Program Specialist	401-6195	arhodes
Sheely, Deb	Director, Competitive Integrated Programs	401-1624	dsheely
Thro, Ann Marie	Plant Breeding, Genetics, Genomics, Biotechnology	401-6702	athro

*Email addresses listed end with **"@csrees.usda.gov"** (example: arhodes@csrees.usda.gov)

Express Mail
USDA/CSREES/PAS
800 9th Street S.W.
Washington, DC 20024

CSREES Plant Science Websites
Plant & Animal Systems Unit: www.csrees.usda.gov/about/offices/pas.html
Pest Management Program Index: www.csrees.usda.gov/nea/pest/pest.html

CSREES WEB LINKS	
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Animal & Plant Biosecurity	http://www.csrees.usda.gov/animalplantbiosecurity.html
Agricultural Systems	
Manure & Nutrient Management	http://www.csrees.usda.gov/manurenutrientmanagement.html
Organic Agriculture	http://www.csrees.usda.gov/organicagriculture.html
Precision Farming	http://www.csrees.usda.gov/precisionfarming.html
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